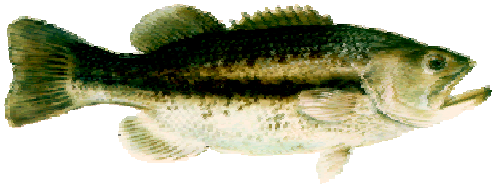
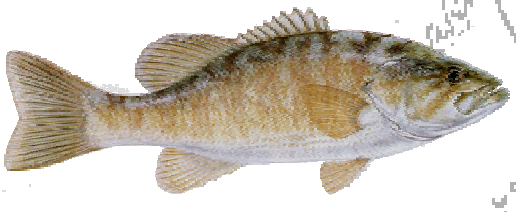
Ohio River Black Bass

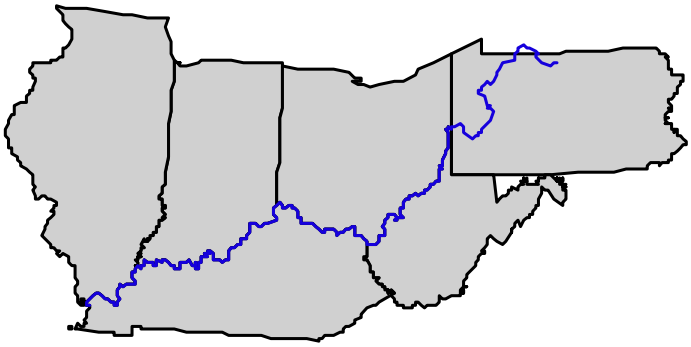
2001 Status Report



Largemouth Bass



Smallmouth Bass



Spotted Bass

Ohio **R**iver **F**isheries **M**anagement **T**eam

Pennsylvania Fish & Boat Commission

West Virginia Division of Wildlife

Ohio Department of Natural Resources Division of Wildlife

Kentucky Department of Fish & Wildlife Resources

Indiana Division of Fish & Wildlife

Illinois Department of Natural Resources

Black bass artwork provided with permission of Texas Parks and Wildlife.

EXECUTIVE SUMMARY

The Ohio River Fisheries Management Team began a coordinated effort to manage and monitor Ohio River black bass populations, habitats, and fisheries in 2001. Early results have provided a river-wide perspective of these important sport fishes. Key activities and findings include the following:

- SAMPLING. ORFMT states are collectively monitoring black bass populations in five study pools throughout the Ohio River.
- SPECIES COMPOSITION. Habitat is better suited for smallmouth bass in the upper Ohio River. However, downstream areas are better suited for spotted and largemouth bass.
- ABUNDANCE. Ohio River black bass populations are highly variable from year to year, but are similar to other large rivers and streams.
- GROWTH. Ohio River black bass grow fast compared to largemouth bass from inland reservoirs.
- STATUS OF YOUNG FISH. Monitoring abundance and growth rates of younger fish gives an indication of how good the fishery will be in 2 to 3 years.
- CONDITION. Ohio River black bass are in excellent condition, indicating that a good supply of food is available.
- TOURNAMENT RESULTS. River-wide reporting of tournament results allows states to evaluate angling success and track populations.
- STOCKING. WVDNR initiated an experimental program in 2000 to evaluate the success of stocking largemouth bass in embayments.
- HABITAT. ODNR initiated a pilot study in Fall 2000 to evaluate the effects of varying flows and temperatures on reproduction and survival in the Belleville Pool.
- PARTNERSHIPS. The ORFMT has participated in several meetings with the U.S. Army Corps of Engineers to discuss Ohio River issues related to access, dredging, and navigation.
- CREEL SURVEY. Tailwater surveys were initiated in Fall 2001. Results will include summaries of angler catch rates, harvest, and effort.
- ACCESS. The ORFMT states continue to add and renovate access sites throughout the Ohio River to increase fishing opportunities.

INTRODUCTION & BACKGROUND

Black bass (largemouth, smallmouth, and spotted bass) are important Ohio River sport fishes. They provide boat- and shore-fishing opportunities from all areas of the river, making bass fishing an important recreational activity on the river and a valued source of revenue for the regional economy.

Historically, annual angling success for black bass on the Ohio River has been variable. These fluctuations are likely due to changes in water temperature, water level, and availability of food. To better manage this fishery, the states bordering the Ohio River have been working collectively to identify the factors which regulate reproduction and survival.

The border states formed the Ohio River Fisheries Management Team (ORFMT; Figure 1) in 1990 in response to a U.S. Supreme Court ruling on multi-state ownership of the river. Since that time, the ORFMT has pursued cooperative, interstate fisheries management throughout the river.

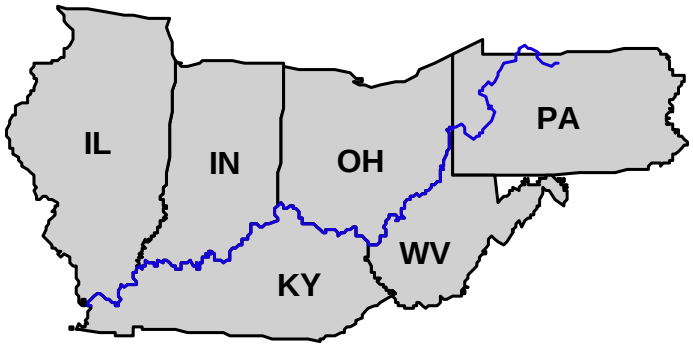


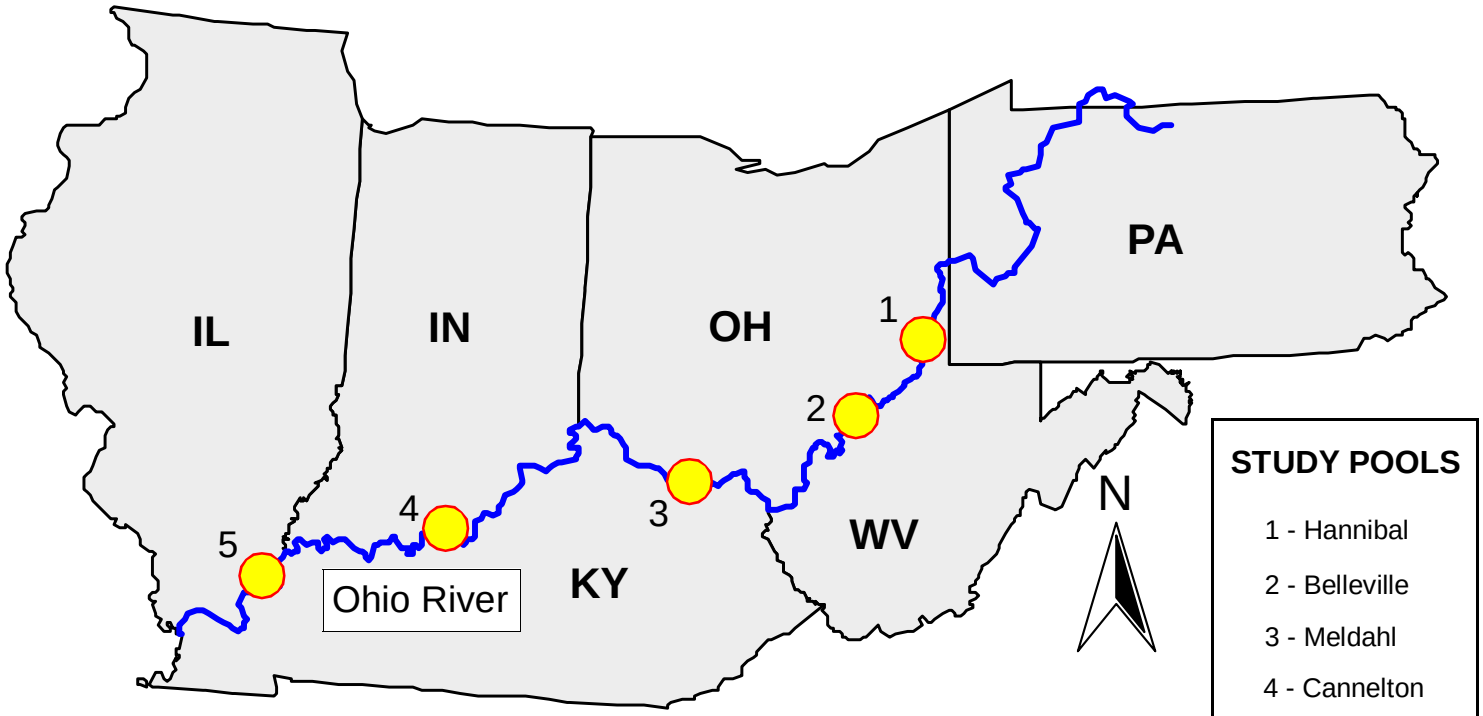
Figure 1. Ohio River Fisheries Management Team states.

In the Fall of 2001, the ORFMT began monitoring black bass populations river-wide. A summary of these activities is provided in this ORFMT update. Data are compared with largemouth bass averages from reservoirs in Ohio and Kentucky as a reference.

ACHIEVEMENTS, 2001

- Monitored black bass populations in five pools to determine population quality.
- Monitored temperature and water level fluctuations in Belleville Pool to evaluate their effects on reproduction.
- Conducted angler surveys in eight tailwaters to evaluate sizes and numbers of fish caught.
- Standardized and summarized tournament data reporting to improve population monitoring.
- Continued evaluation of largemouth bass stocking in Belleville Pool.
- Met with U.S. Army Corps of Engineers to improve fishing opportunities.
- Presented project updates to bass angling organizations.

STUDY AREA



STUDY POOLS

1 - Hannibal

2 - Belleville

3 - Meldahl

4 - Cannelton

5 - Smithland

Figure 2. Study pool locations.

Black bass were sampled with shoreline electrofishing from the five study pools in Fall 2001 (Figure 2). Bass were identified, measured, weighed, and aged.

- Abundance was estimated by catch per effort of all sizes of bass.
- Average length at each age was determined to estimate growth.
- Bass health was examined by relating lengths and weights of individual fish to estimate body condition.
- Results were compared with largemouth bass data from Ohio and Kentucky reservoirs.

SPECIES COMPOSITION

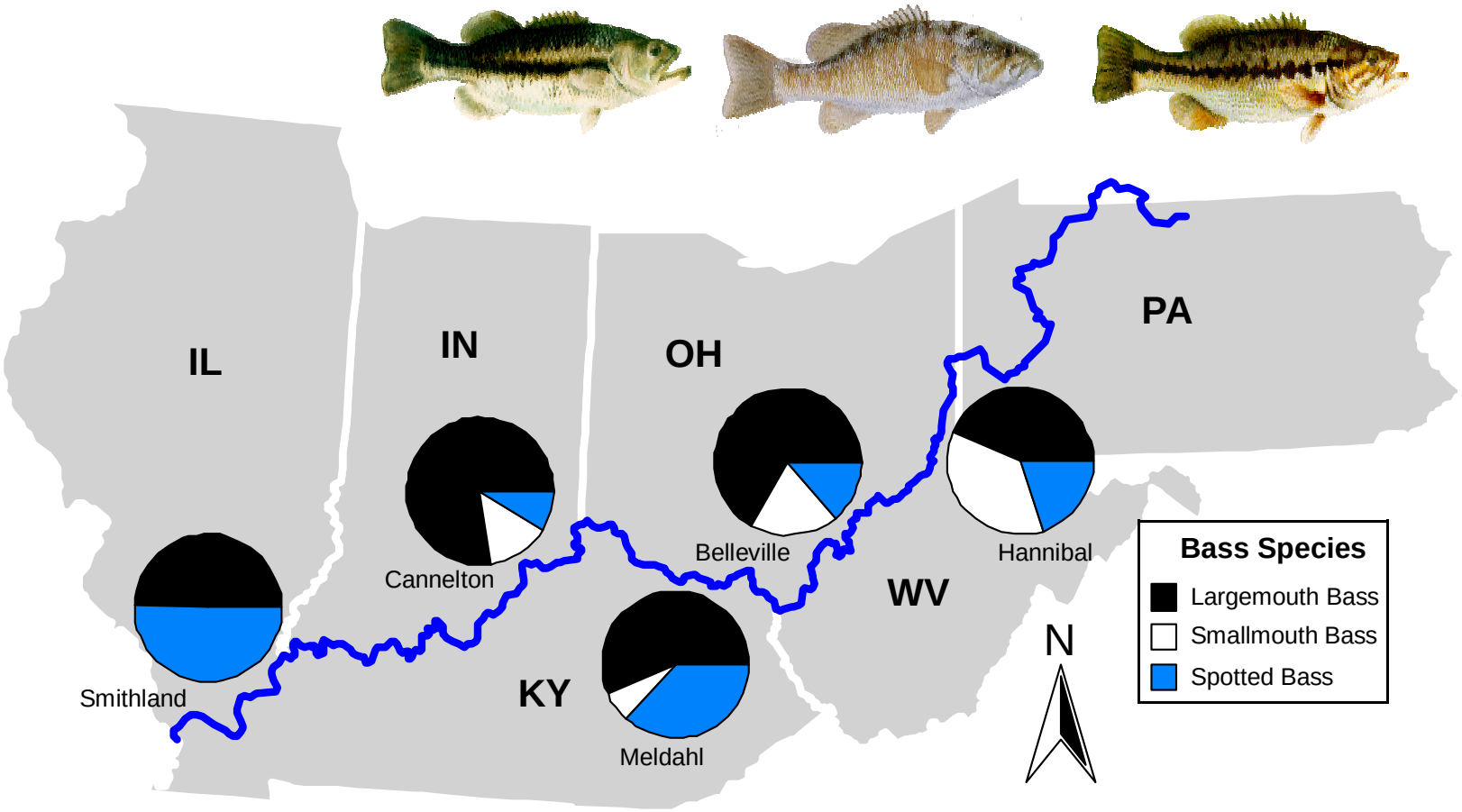


Figure 3. Composition of black bass species from the mouth to the headwaters of the Ohio River.

Habitat changes from the headwaters to the mouth of the Ohio River. These changes, including temperature, gradient, flow, substrate, and backwater areas influence species composition. Habitat in the upper Ohio River is more suitable for smallmouth bass; whereas, downstream habitat is better suited for spotted bass.

ABUNDANCE

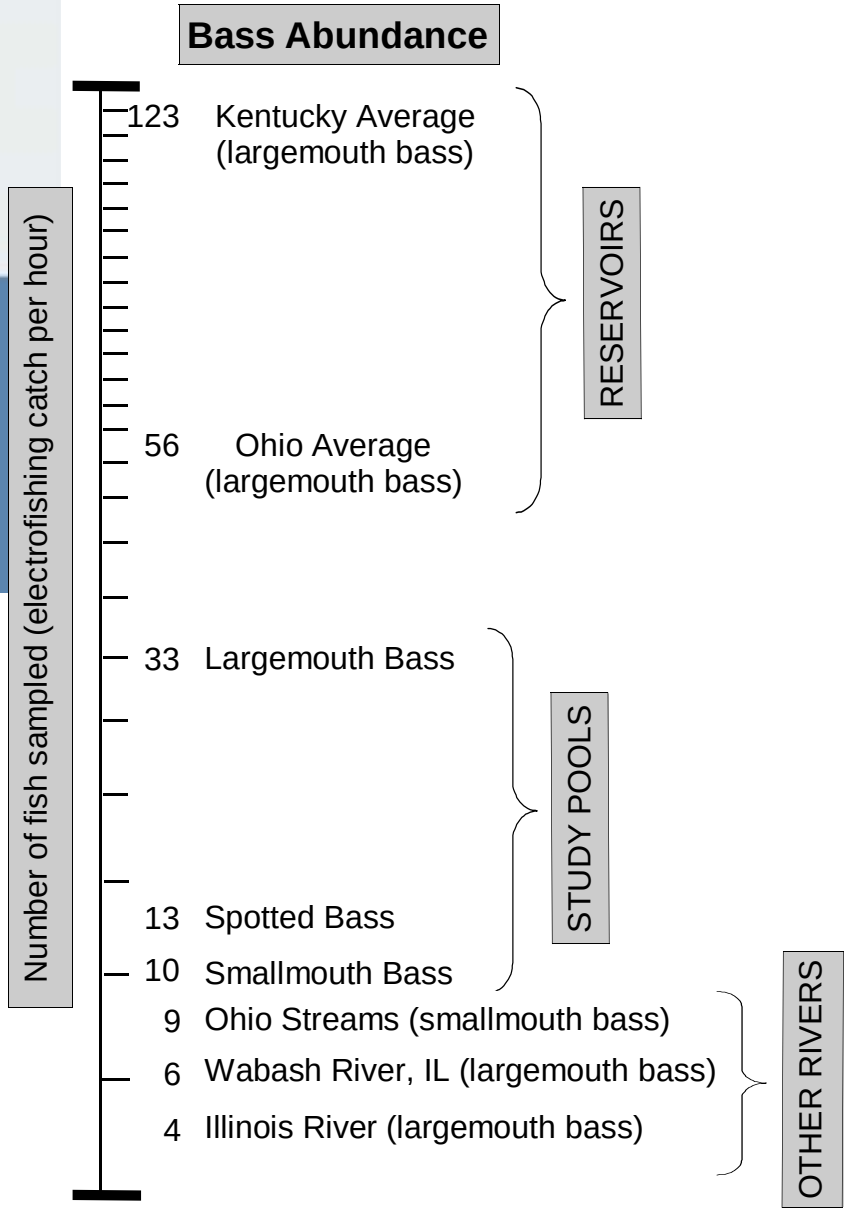


Figure 4. Ohio River black bass catch rates compared to catch rates from regional reservoirs, lakes, and streams.

Based on electrofishing samples, fewer bass are in the Ohio River than in Ohio and Kentucky reservoirs. However, Ohio River black bass numbers are comparable to those from regional streams and rivers.

GROWTH

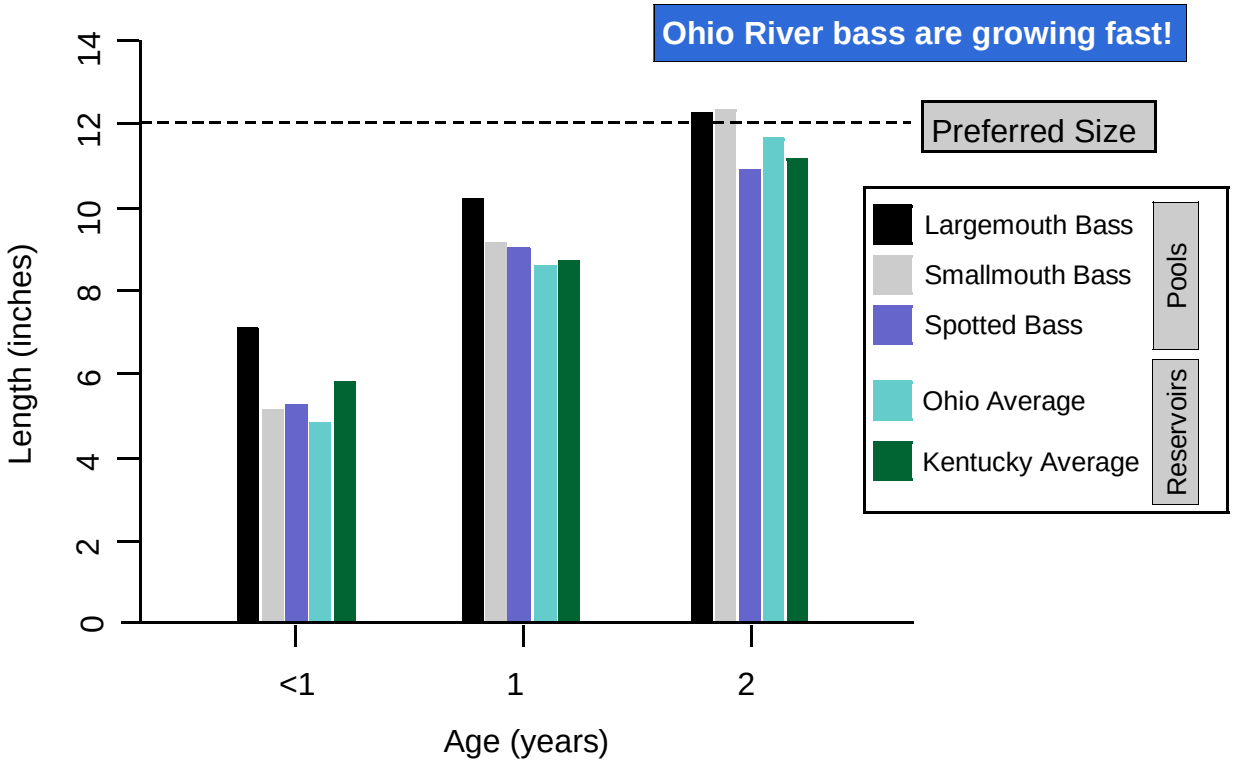


Figure 5. Average lengths at age of Ohio River black bass compared to largemouth bass from inland reservoirs in Ohio and Kentucky.

Ohio River black bass are growing as fast, if not faster than largemouth bass from inland reservoirs in Ohio and Kentucky. Ohio River black bass reach 12 inches by their third growing year, indicating that the fishery is largely made up of fish age 2 and older.

Monitoring the abundance and growth rates of younger fish gives us an indication of how good the fishery will be in 2 to 3 years.

CONDITION

Ohio River bass are in good condition!

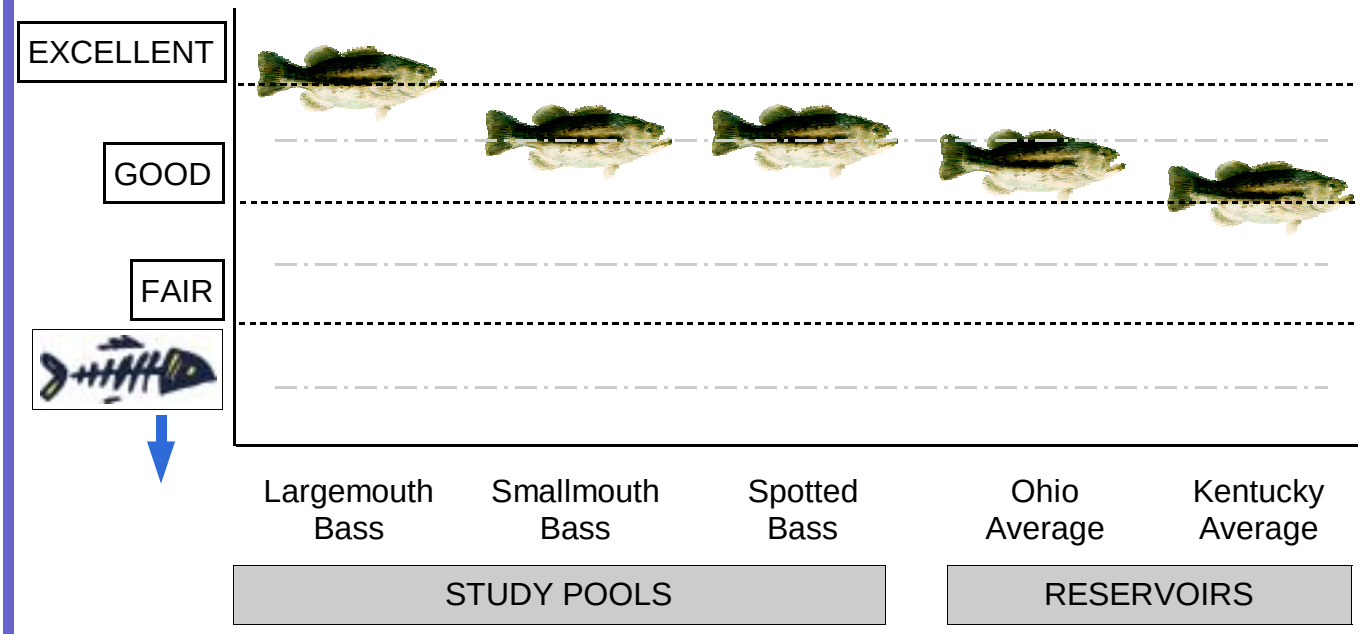
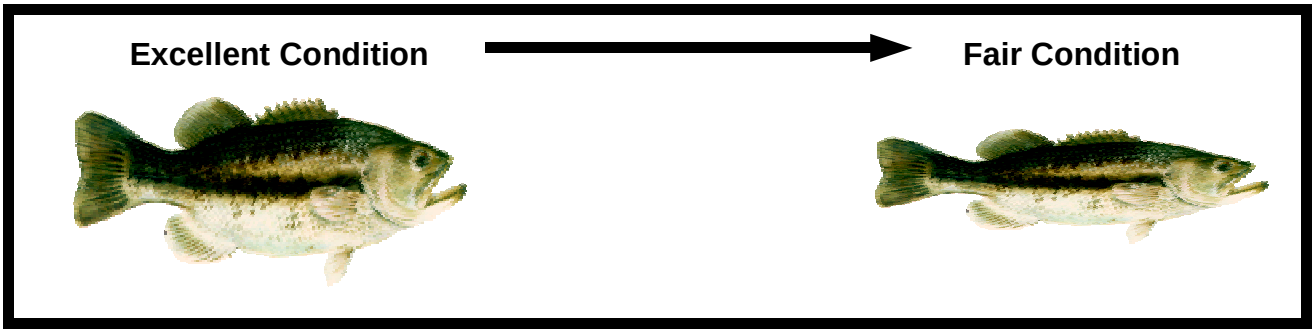


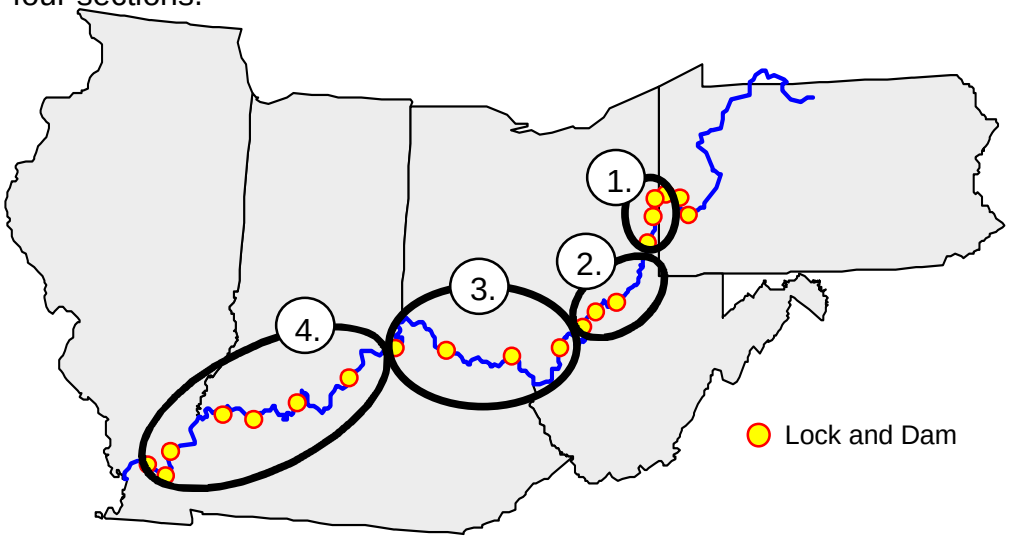
Figure 6. Condition of Ohio River black bass compared to largemouth bass from inland reservoirs in Ohio and Kentucky .

Body condition is a measure of fish health. Ohio River black bass are in good to excellent condition, indicating that there is a good supply of food available. These fish are also in slightly better condition than largemouth bass from inland reservoirs in Ohio and Kentucky.



TOURNAMENT RESULTS

In 1999, the ORFMT began collecting standardized black bass tournament data river-wide. This allowed states to evaluate the success of competitive angling and track populations. Results are reported as the number of hours it took to catch a 12-inch largemouth bass, smallmouth bass, or spotted bass. Species composition is not uniform throughout the 981-mile length of the Ohio River. To allow for a river-wide evaluation, the Ohio River was divided into four sections.



River Sections

1. New Cumberland Pool - Hannibal Pool
2. Willow Island Pool - Racine Pool
3. R.C. Byrd Pool - Markland Pool -
4. McAlpine Pool - Smithland Pool

Figure 7. Ohio River sections used for analyzing black bass tournament data.

Tournament catch rates (hours it takes to catch a 12-inch black bass) tended to increase from lower to upper portions of the river and were greatest in all four areas during 2001. Differences in catch rates among areas can be partially attributed to the presence of smallmouth bass in the upstream river, providing anglers with a greater opportunity to catch all three species of black bass.

Table 1. Ohio River black bass tournament results for each river section, 1999 - 2001.

	Hours to Catch a 12-inch Black Bass (Largemouth Bass, Smallmouth Bass, Spotted Bass)		
Location	**1999**	**2000**	**2001**
Ohio River	4.2	4.5	7.1
Section 1	3.8	3.6	6.7
Section 2	3.6	5.3	8.3
Section 3	3.7	5.9	7.1
Section 4	6.7	5.9	7.1

STOCKING

Largemouth Bass Experimental Stocking Program

The WVDNR initiated an experimental largemouth bass stocking program in cooperation with the Ohio River Adopt-a-Bass Chapter in 2000. The program goal was to evaluate success of bass stocking in an embayment. A long-term objective was to determine if stocking would enhance largemouth bass populations in an embayment. Largemouth bass were uniquely marked with colored tags in their pelvic fin prior to stocking. Follow-up surveys by WVDNR and Ohio River Adopt-a-Bass Chapter members were planned to assess program success.

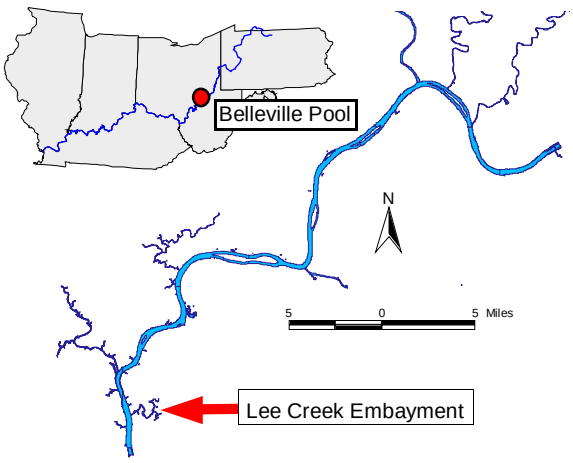


Figure 8. Experimental stocking location, Belleville Pool, Ohio River.

METHODS

- November 2000. 960 age-1 largemouth bass (6-9 inches) were stocked into the Lee Creek embayment, Belleville Pool. (Commercially reared).
- November 2001. 912 age-0 minnow-fed largemouth bass (5-12 inches) were stocked into the Lee Creek embayment (WVDNR hatchery reared).
- Concurrent with both stockings, large-mouth bass were introduced into 1-acre ponds to determine overwinter survival.

RESULTS

Overwinter survival was less than 10% for bass stocked in 2000, but increased to 60% for bass stocked in 2001. Low survival of bass stocked in 2000 was due to cold winter temperatures and ice cover on the ponds, the Ohio River, and embayments. Similar results were found for bass stocked into Lee Creek in November 2000. Few stocked fish were recovered in electrofishing surveys conducted in December 2000. Since then no fish stocked in 2000 have been recovered. Evaluations will continue through 2005 in the Lee Creek embayment.

2002 Activities. 650 age-1 largemouth bass were stocked into Dry Run Embayment, Hannibal Pool (Figure 9). These fish were held in hatchery ponds and offered minnows throughout the winter. Evaluations will continue through 2005.

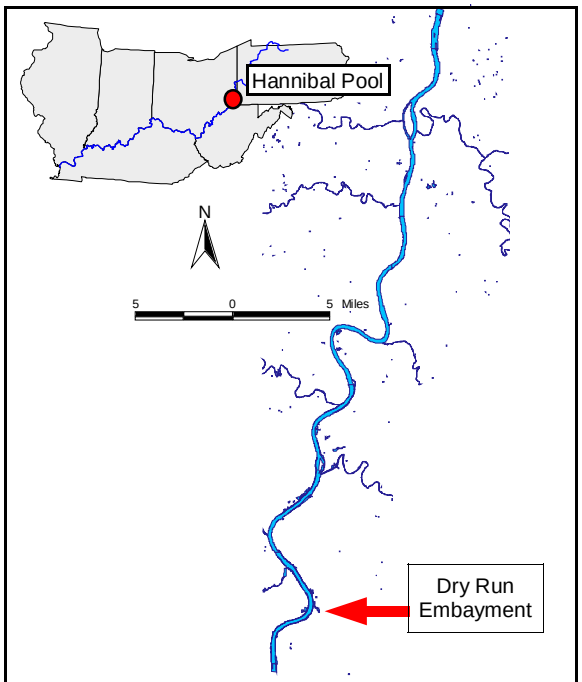


Figure 9. Experimental stocking location, Hannibal Pool, Ohio River.

HABITAT

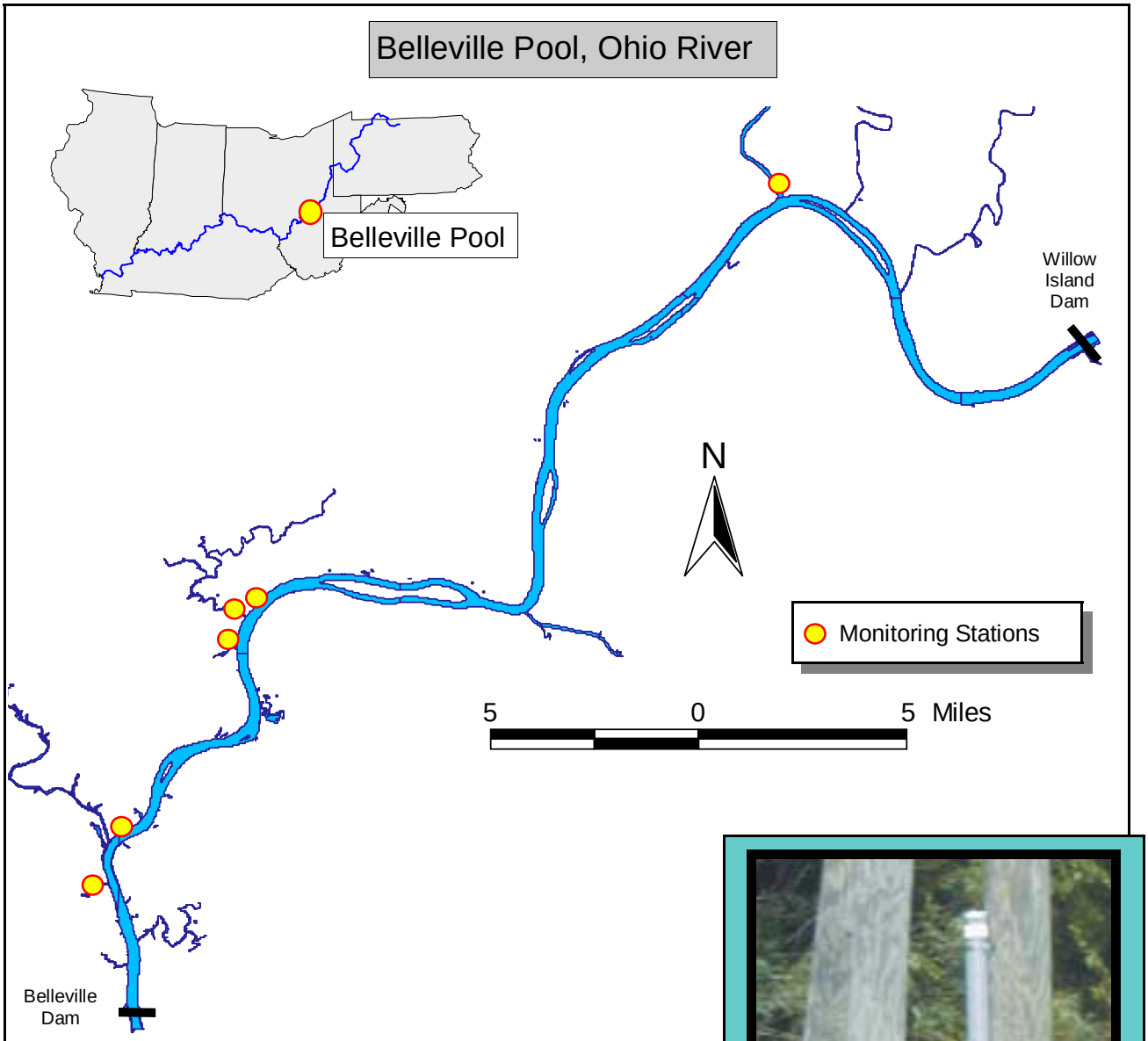


Figure 10. Locations of habitat monitoring stations in the

Temperature and water level are monitored at six stations throughout the Belleville Pool. These stations are part of a pilot study to explore how these factors influence black bass reproduction and survival.

Figure 11. Habitat monitoring station.

HABITAT cont.

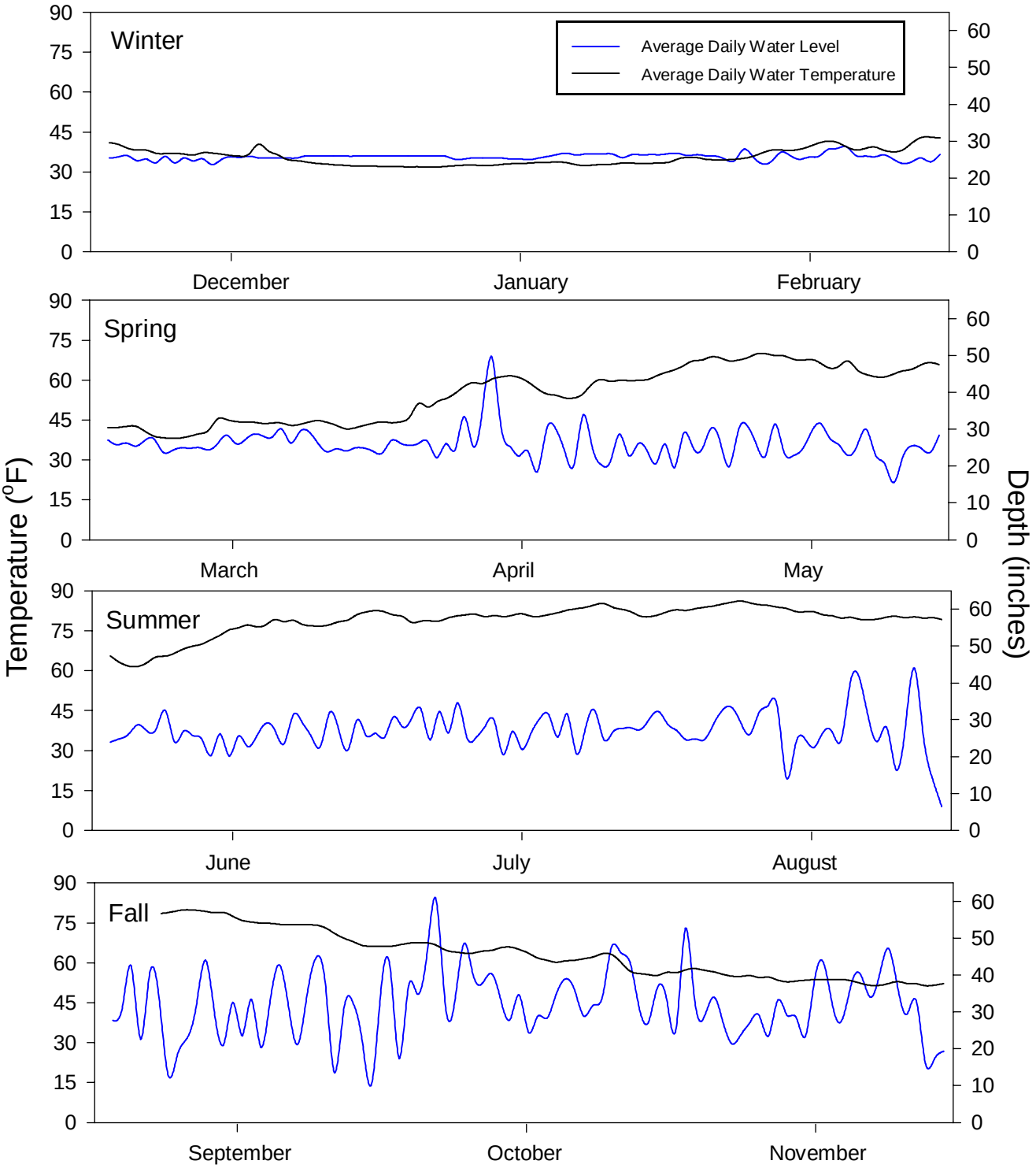


Figure 12. Average daily water temperatures and water levels from Indian Run Embayment, Belleville Pool, Ohio River, December 2000 - November 2001. Depths at monitoring stations reflect daily pool fluctuations.

PARTNERSHIP WITH USACE

The ORFMT has participated in several meetings with the U.S. Army Corps of Engineers (USACE) to discuss Ohio River issues related to access, dredging, and navigation.

- The USACE owns property surrounding each lock and dam project. ORFMT states are working cooperatively with USACE project leaders to improve access at each site.
- The ORFMT prioritized embayments where siltation is impacting access and fish habitat. While USACE operations impact these areas, budgetary constraints limit their ability to dredge non-essential locations (embayments). Cost to dredge an average sized embayment would be approximately $161,000.00.
- The USACE is funding a large-scale study (Ohio River Mainstem System Study, ORMSS) to investigate the impacts of lock expansion on the resource. The ORFMT continues to be actively involved with this project, designing a river-wide angler survey, a tagging study to assess fish movement, and assessing habitat through university partnerships.

ANGLER SURVEYS

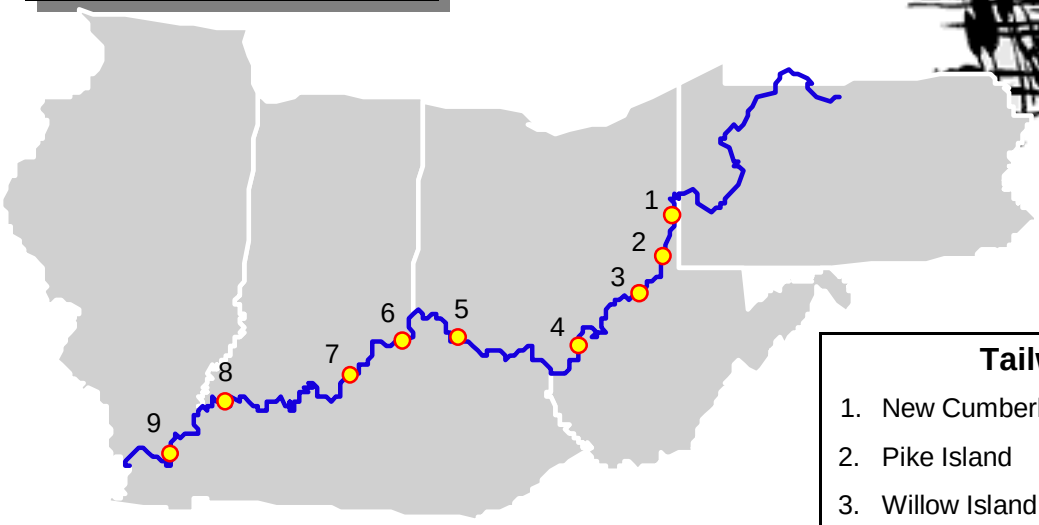


Figure 13. Tailwater creel locations.

Tailwaters

1.	New Cumberland	6.	Markland
2.	Pike Island	7.	McAlpine
3.	Willow Island	8.	Uniontown
4.	R.C. Byrd	9.	Smithland
5.	Greenup		

Tailwater angler surveys were initiated in Fall 2001. These surveys are general fisheries surveys associated with the ORMSS funded by the U.S. Army Corps of Engineers.

Results from these surveys will include summaries of angler catch rates, angler harvest, and angler effort.

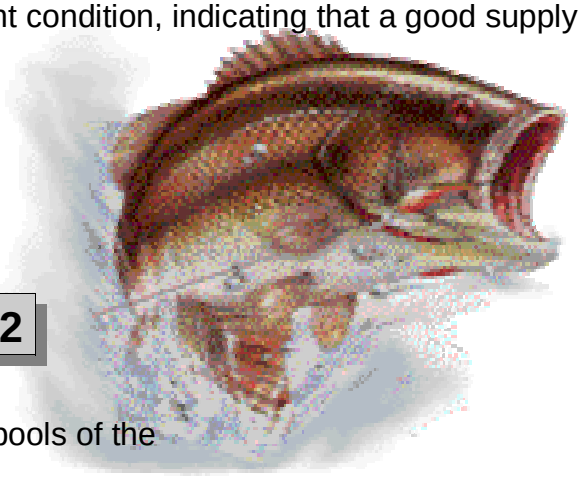
ACCESS

Table 2. Ohio River access improvements and additions.

STATE	IMPROVEMENTS	NEW RAMPS
West Virginia	Handicapped access being added at the Williamstown, WV ramp (Belleville Pool); Other improvements have been discussed for a R.C. Byrd Pool site.	
Ohio	ODNR grants were awarded to fund 4 boat ramp renovations.	•K.H. Butler ramp was added at river-mile 284.2 (Greenup Pool). Plans for a ramp at river-mile 241.2 (R.C. Byrd Pool) have been submitted. •ODNR grants were awarded to fund 2 new ramps.
Kentucky	Routine maintenance continues each year. KDFWR has discussed taking ownership of several COE ramps.	
Indiana	Renovations and the addition of handicap access are ongoing at the Troy, IN ramp	
Illinois	Routine maintenance continues each year.	Illinois boating grant money was used to fund a new boat ramp at river mile 953 (Pool 53, soon to be Olmstead Pool).

SUMMARY

- Ohio River black bass populations are highly variable from year to year. While Ohio River catch rates are low compared to reservoirs, they are similar to other large rivers and streams.
- Ohio River black bass are growing fast, especially compared to largemouth bass from inland reservoirs in Ohio and Kentucky. Ohio River bass are growing to 12 inches by their third year of growth.
- ORFMT monitoring of abundance and growth of young bass gives us an indication of how good the fishery will be in 2 - 3 years.
- Ohio River black bass are in excellent condition, indicating that a good supply of food is available.



ONGOING ACTIVITIES: 2002

- Sample black bass in the five study pools of the Ohio River.
- Monitor habitat in the Belleville Pool.
- Evaluate largemouth bass stocking in Belleville and Hannibal Pools.
- Summarize 2002 tournament data.
- Partnering with the U.S. Army Corps of Engineers.
- Analyze first year results from ORMSS angler survey.
- Report university findings on ORMSS fish habitat use study.
- Analyze tagging results associated with ORMSS fish passage study.